John W. Flannagan Reservoir
2008

Flannagan Reservoir is a 1,143-acre impoundment located in Dickenson County. The reservoir was built to provide flood control, fish and wildlife habitat and recreational opportunities. The U.S. Army Corps of Engineers completed construction of the dam and project in 1964.

Fifty miles of beautiful shoreline consisting of mature hardwood forest interspersed with spectacular rock bluffs surround this deep, clear reservoir. At full pool elevation of 1,396 feet above sea level, the lake has a maximum depth of 166 feet and an average depth of 58 feet. The lake level fluctuates about 16 feet in a normal water year. The lake is drawn down to winter pool during October and November, and is typically returned to summer pool in April.

Flannagan Reservoir is home to a variety of sport fish species including: largemouth and smallmouth bass, walleye, hybrid striped bass, channel catfish, flathead catfish, crappie, bluegill, rock bass, common carp and musky. Alewives and gizzard shad provide forage for the sportfish populations. Most of these populations are self-sustaining and do not require maintenance stockings. The Department of Game and Inland Fisheries does stock walleye fingerlings (114,300) and hybrid striped bass fingerlings (17,145) each year.

The overall fisheries management goal for Flannagan Reservoir is to provide quality angling opportunities for a diversity of fish species. In order to provide quality fishing opportunities, fish populations need to offer both abundance and good size structure. Abundance is measured in terms of how many fish are collected per hour of electrofishing or per net night of sampling. Size structure is measured by looking at the proportion of adult fish in the sample that are larger than a given size. For example, we consider the proportion of adult largemouths larger than 15 inches, or the proportion of adult black crappie that are over 10 inches. Catch rates and size structure data provide a standardized means of comparing this year's fish sample to last year's catch, as well as to the samples collected at other lakes. Catch rates do not represent the number of fish you might catch while fishing, because you may be more or less effective than the sampling gear. Size structure measures give information about the sizes of fish available in the population. Again, this may not match what you see while fishing, since you might be using gear or techniques that target a particular size range, while sampling tends to collect small and average-sized fish. It is likely that you will catch larger fish than we have collected. These data are best used to track the trends in a population from year to year, or to compare one lake's fish population to another lake's population.

Bass

Largemouths are the most abundant black bass in Flannagan Reservoir. Smallmouths are fairly common in the main lake and the Pound River arm, but are collected less frequently in the Cranesnest arm. Sampling catch rates for bass vary from year to year (Figure 1). Some variation can be expected due to fluctuations in water temperatures and weather patterns prior to and during the sampling period. Catch rates for largemouth and smallmouth increased slightly in 2007, compared to daytime sampling in previous years.

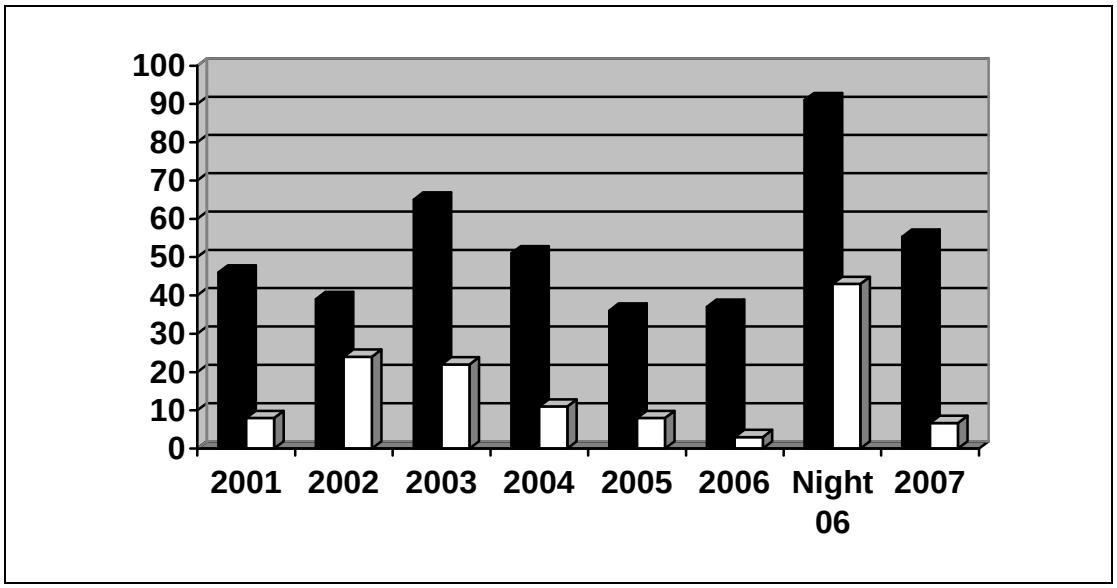

Figure 1. Number of bass collected per hour of electrofishing in Flannagan Reservoir 2001 through 2007. Dark columns represent largemouths and light columns represent smallmouths.

The 2007 sample was one of the better bass collections in recent years. Catch rates were not as high as those observed in the 2006 night sample, however. The higher catch rates at night are testimony to the challenges of collecting bass in shallow water during the daytime in Flannagan Reservoir's clear water. This is no surprise to bass anglers who have fished the lake during the day and at night. If you haven't tried fishing at night, the catch rates displayed in Figure 1 should be ample encouragement.

The number of preferred size (15 inches or greater) largemouths collected per hour of sampling in 2007 was the best on record for daytime samples (Figure 2). In fact, the catch rate for preferred size largemouths was as high as the rate observed in the 2006 night sample. The catch rate for smallmouth greater than 14 inches increased slightly compared to daytime sampling in 2006.

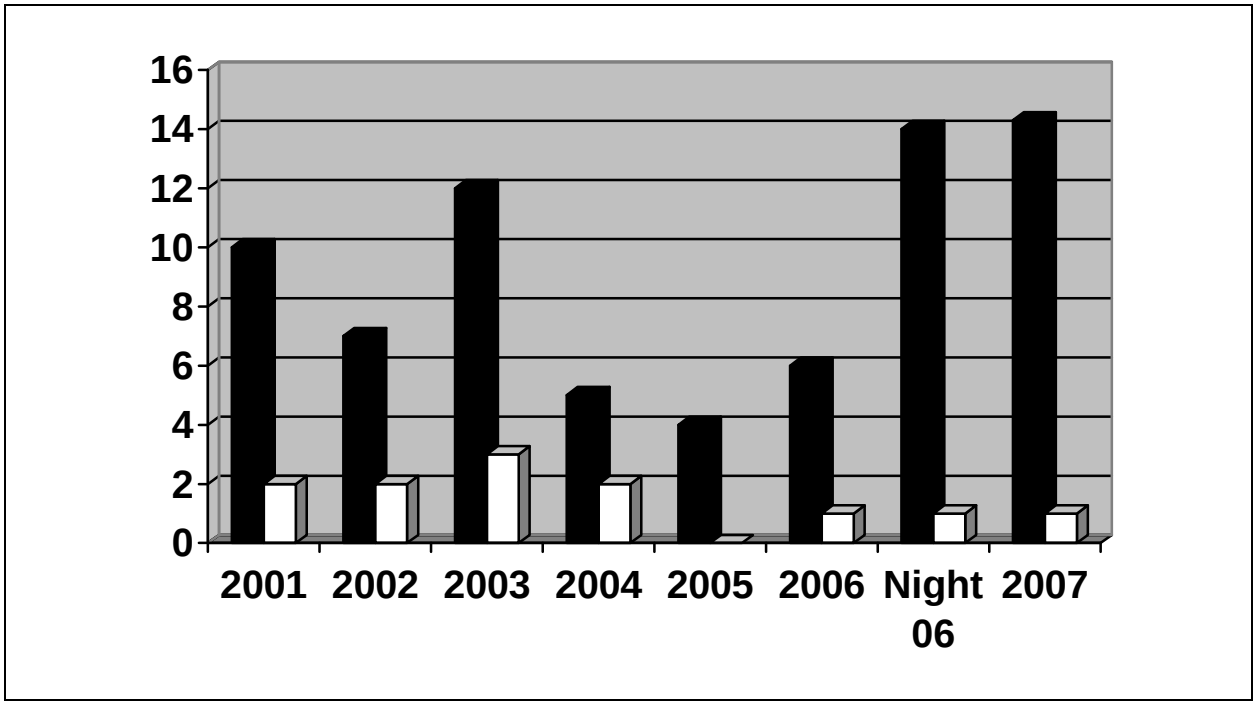

Figure 2. Number of preferred size bass collected per hour of sampling at Flannagan Reservoir 2001-2007. Preferred size is fifteen inches for largemouth (dark columns) and 14 inches for smallmouth (light columns).

Overall the bass fishery appears to be in good shape. There has been a decline in the number of young fish collected. Biologists will be monitoring catch rates to see if this is normal fluctuations in spawning success to determine if management action needs to be taken to improve recruitment.

Walleye

The walleye fishery has received a lot of attention since Flannagan Reservoir was designated as a "priority" walleye water in 2000. Walleye catch rates increased steadily from 2000 to 2004. A fish kill caused by low dissolved oxygen was documented in September 2004. Only a few dead fish were observed on the lake's surface, but apparently many of the dead fish remained at depth. Sampling catch rates declined sharply in 2005 and 2006. We have been hopeful that the annual fingerling stockings (114,300 per year in May or June) would rebuild the population quickly. The 2007 electrofishing catch rates were very good compared to previous years (Figure 3). This suggests that the walleye population is rebounding.

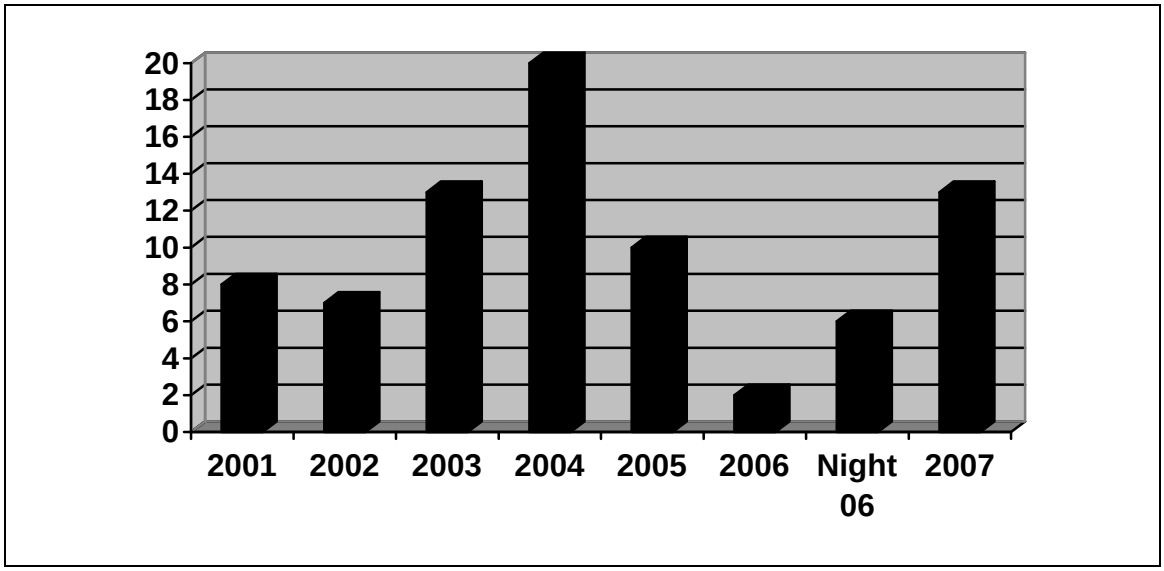

Figure 3. Number of walleyes collected per hour of electrofishing in Flannagan Reservoir 2001-2007.

Age data for walleyes collected in gillnets in 2007 suggest poor survival of walleye fingerlings stocked in 2003, 2004 and 2005 (Figure 4.) Only a few fish from these year classes were collected. Some decline in the catch of older age classes is expected due to natural mortality, harvest by anglers and the fact that large fish are not as likely to be caught in the gillnets. However, the absence of fish from 2003 and 2004, and the extremely low density of fish from 2005, suggests poor recruitment. The low catch rates in 2006 are likely the result of both a lack of recruitment of small walleyes and the dissolved oxygen related mortality of adult walleyes in 2004.

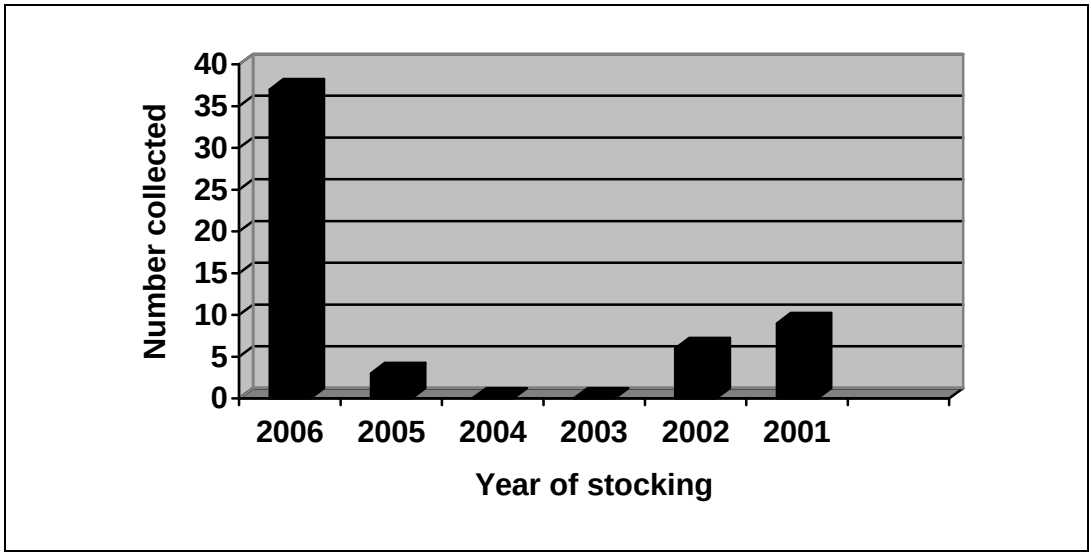

Figure 4. Number of walleye collected in 2007 from each stocking year class 2001-2006. These data are from the fall 2007 gillnet sample.

The good news is that fingerling walleye survival appears to be very good for the 2006 year class, and the overall sample catch rates are improving. Anglers may still notice the poor survival of stocked fingerlings from 2003-2005, because there could be fewer walleyes in the 18 to 20-inch ranges this year. Few walleyes in the 16 and 17-inch ranges were collected in 2007 (Figure 5). If the walleyes stocked in 2006 grow quickly they might just fill this void. Otherwise, there should be lots of smaller walleyes and a decent number of larger walleyes left from stockings prior to 2003.

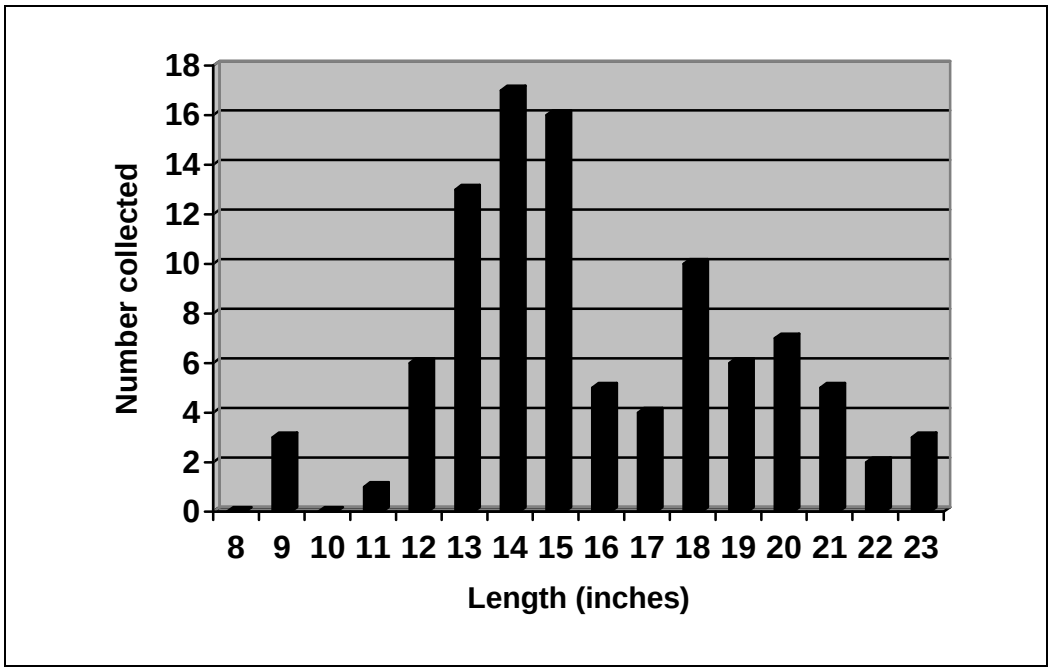

Figure 5. Length frequency of walleyes collected from Flannagan Reservoir in 2007. These data are from electrofishing and gillnetting samples combined.

Hybrid striped bass

Hybrid striped bass were first stocked into Flannagan Reservoir in 1999. The hybrid fishery has become quite popular in the relatively short period of time since the first introduction. Hybrids are stocked each year in July or August as fingerlings (two to four inches). Hybrid striped bass growth rates are good in Flannagan. They measure eight to ten inches or more after one year in the reservoir, and reach 14 to 16 inches by the end of their second growing season (1.5 years old). Most two to three year old hybrids will exceed 20 inches in total length. Fish from the first stocking in 1999 are now over 26 inches long. The Department is now recognizing hybrid striped bass in both the state record fish program and the angler recognition program. Hybrid striped bass weighing 8 pounds or more could be entered as a candidate for a state record in this new category. Hybrid striped bass that measure at least 24 inches, or weigh at least 8 pounds, qualify for an angler recognition award. More information about the state record and angler recognition programs can be found in the current issue of the Freshwater Fishing in Virginia booklet or on the Department's website: www.dgif.virginia.gov.

Crappie

Since 1998, one fisheries management goal has been to re-establish the black crappie population in Flannagan Reservoir. Biologists have used a variety of strategies to accomplish this task. The annual stocking of about 1,000 adult black crappie (6 to 8 inches) from 1998 to 2002 was the first step toward recovery. Habitat enhancement has also played a vital role in the effort. Hardwood brush piles and hinge-trees were placed in the Pound and Cranesnest River arms of the reservoir and in sheltered coves in the main lake. These structures provide excellent spawning habitat and escape cover for crappie as well as other species of fish. A 10-inch minimum length limit was also established to allow crappie an opportunity to spawn for a couple of seasons before being legal for harvest.

There are promising signs that the efforts are paying off. Catch rates for black crappie have increased from one fish every three hours of sampling in 1998 to a high of 12 fish per hour of sampling in 2006 (Figure 6). The catch rate decline somewhat in 2007, but was still above average. The size structure of the population is excellent; about 75 percent of the adult crappie collected in 2006 exceeded 10 inches in length and about 12 percent were longer than 12 inches. Fishing should be very good for the next few years. Hopefully natural reproduction will sustain the population without stocking.

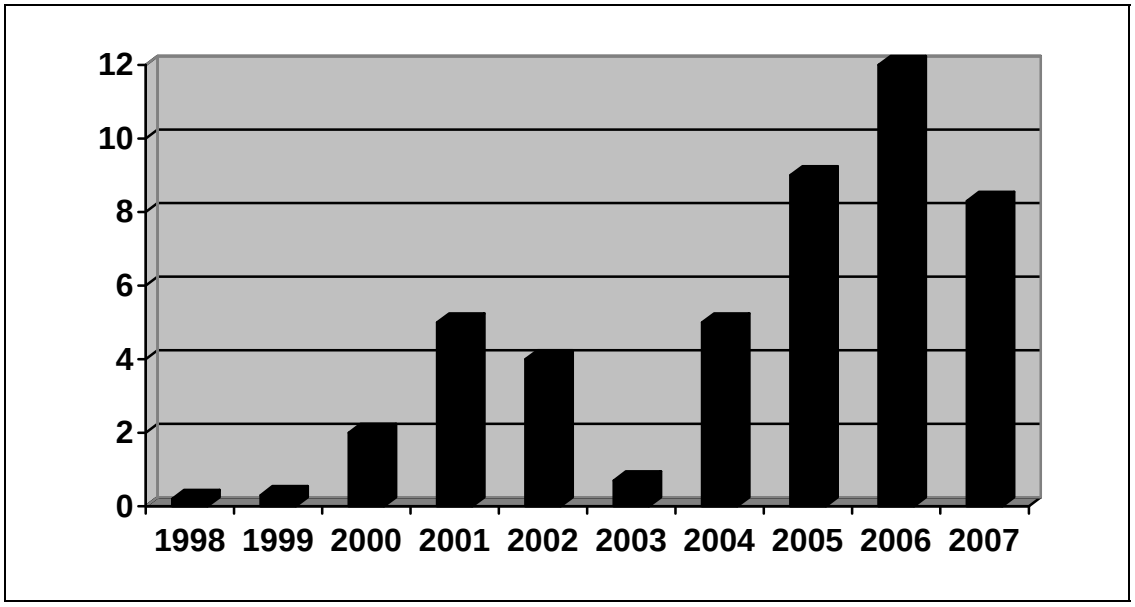

Figure 6. Number of black crappie collected per hour of electrofishing at Flannagan Reservoir 1998-2007.

Other species

Flannagan also offers some very good fishing for bluegills. Population sampling yields only average numbers and sizes of bluegills. However, anglers frequently report catching very nice bluegills. Some very nice catches of bluegills were recorded in the 2003 angler survey. There are a few hybrid sunfish, sometimes called 'Georgia Giants', in

Flannagan. These fish grow to enormous sizes. Sunfish over two pounds have been landed in recent years.

Channel and flathead catfish populations provide good fishing opportunities as well. Again, samples yield mostly “average size” catfish, whereas anglers often catch trophy cats. Some huge carp also roam Flannagan’s clear waters, just waiting to test an angler’s skills and equipment. One 32-inch carp collected in 2006 was more than 30 years old.

A residual musky population persists even though none have been stocked in more than 20 years. Natural reproduction has been documented on a couple of occasions. Some young-of-year muskies (about five inches long) were collected in the Pound River arm of the reservoir in 2001. This low-density population should continue to provide some lucky anglers with the fish of a lifetime each year.

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